



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,207	04/16/2004	Jerry H.C. Lee	25341A	1155
22889	7590	08/14/2009		
OWENS CORNING 2790 COLUMBUS ROAD GRANVILLE, OH 43023			EXAMINER MATZEK, MATTHEW D	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			08/14/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USIPDEPT@owenscorning.com

Office Action Summary

Application No.

10/826,207

Applicant(s)

LEE ET AL.

Examiner

MATTHEW D. MATZEK

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-15, 17-19, 21-23 and 25-31 is/are pending in the application.
- 4a) Of the above claim(s) 26 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15, 17-19, 21-23, 25 and 28-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Amendment

1. The amendment dated 5/6/2009 has been fully considered and entered into the Record. Claims 1 and 9 have been amended to now recite that the sizing material includes a film forming polymer, a coupling agent and a lubricant. The previously applied art fails to provide for such a composition and as such the rejections set forth in the last office action are hereby withdrawn. Claim 28 has been canceled. Claims 1-3, 5-15, 17-19, 21-23, 25-27 and 29-31 remain pending with claims 26 and 27 withdrawn from consideration. Claims 1-3, 5-15, 17-19, 21-23, 25 and 29-31 remain active.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3 5-8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Gonthier et al. (WO 03/000611 A1) and Mueller (US 4,375,988) . For examination purposes, Examiner has relied upon the English language equivalent of the WO document, US 2004/0265586 A.

a. Miller et al. teach an asphalt-based roofing material comprising a substrate coated with asphalt (Abstract). The roofing material comprises a glass fiber substrate coated with an asphalt/filler composition (col. 3, lines 60-68) and a surface layer of granules embedded in the asphalt coating (col. 1, lines 13-20). The fibers of Miller et al. meet the limitation of fibers having properties suitable for forming a roofing mat in a roof covering. Miller et al. is silent as to use of a silane-sizing agent for the glass fibers in the asphalt.

Sizing agent

b. Gonthier et al. disclose a sizing composition for glass fibers that are used to reinforce matrices for the purpose of manufacturing lightweight roofs (abstract). The sizing composition proves to be essential for several reasons. Firstly, it acts during manufacture of the strands by protecting the glass filaments from the abrasion that occurs when said filaments rub at high speed against the members used to guide and collect them. Next, the sizing composition gives the strand cohesion by creating bonds between the filaments making up the strand, thereby increasing its integrity and consequently

making it easier to handle. The sizing composition also plays a paramount role in the manufacture of composites reinforced with glass strands by promoting wetting and impregnation of these strands by the matrix material which generally has the appearance of a fluid resin. The materials to be reinforced may incorporate the glass strands in various forms: continuous or chopped strands, fabrics, continuous or chopped strand mats, etc. [0003-4]. The sizing composition may comprise a film-forming polymer, such as polyvinyl acetate [0122], lubricants, coupling agents [0013] and an aminosilane [0127].

- c. Miller et al. and Gonthier et al. are from the same field of endeavor (i.e. glass fiber roofing materials).
- d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used the sizing composition of Gonthier et al. to modify the invention of Miller et al. with the motivation of protecting the glass fibers, improving adhesion between the fibers and the level of impregnation of the surrounding matrix into the fibers as disclosed by Gonthier et al.

Sulfur-containing material

- e. Mueller et al. disclose bituminous binders that contain at least one silane and show excellent improvement of adhesion (abstract). The resulting compositions may be used for the production of roofing tiles. The at least one silane is preferably a polysulfide silane (claim 1) and may further comprise a vinyl silane (col. 1, lines 30-35).
- f. Mueller et al. and Miller et al. are from the same field of endeavor (i.e. bituminous roofing).

- g. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Miller et al. with the polysulfide silane of Mueller et al. with the motivation of improving adhesion as disclosed by Miller et al. It is reasonable to presume that the combination used to reject claim 1 would result in the claimed crosslinking as well as the tear and tensile strength increases because both Applicant and the applied art used a polysulfide silane in asphalt.
 - h. The amount of sulfur-containing material in the sizing is a result-effective variable affecting the increase in adhesion within the asphalt (abstract Mueller et al.). Consequently, absent a clear and convincing showing of unexpected results demonstrating the criticality of the claimed material levels, it would have been obvious to one of ordinary skill in the art to optimize this result-effective variable by routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).
 - i. Claim 5 is rejected as it would have been obvious to one of ordinary skill in the art at the time of the invention to have cut the roofing material to an easy to use size, such as a shingle.
3. Claims 9-15, 17-19, 21, 23, 25 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Gonthier et al. (WO 03/000611 A1) and Mueller (US 4,375,988) as applied to claims 1 and 6 above, and further in view of Schult). The disclosures of Miller et al., Gonthier and Mueller fail to teach the use of elemental sulfur in the asphalt matrix.
- a. Schult discloses an improved sulfur-extended asphalt composition and method for use in making compacted bituminous concrete, whereby sulfur, is added to the

bituminous composition at levels of less than 3.1% (abstract). The resultant sulfur-extended bituminous concrete provides substantially increased mechanical strengths over conventional asphalt. It is also known that sulfur provides asphalt with burning and fire resistance.

b. Miller et al. and Schult are from the same field of endeavor (i.e. roofing material).

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Miller et al. with the elemental sulfur of Schult with the motivation of providing the asphalt composition with increased mechanical strength and a reduced dependence upon petroleum products (col. 1, lines 60-67). The elemental sulfur will form cross-links with the asphalt following its introduction. This contributes to the mechanical strength gain set forth in Schult.

d. The relative amount of sulfur in the asphalt coating composition is a result-effective variable affecting the extendibility and the burning and fire resistance of the coated product. The extendibility and the burning and fire resistance of the coated product increase with additional sulfur. However, the cost of making the bituminous concrete decreases with less sulfur and asphalt. Therefore, one of ordinary skill in the art at the time of the invention would have been motivated to minimize the amount of sulfur being added to the bituminous concrete, while still attaining an increase in bituminous concrete strength and fire resistance. Consequently, absent a clear and convincing showing of unexpected results demonstrating the criticality of the claimed weight percentage, it would have been obvious to one of ordinary skill in the art to optimize this

result-effective variable by routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

e. Claim 10 is rejected as the polysulfide silane serves as a bonding material for the fiber material. The vinyl groups of the vinyl silane of Mueller provide a bonding material for the elemental sulfur and include the claimed double bonds. This bonding affinity and double bond structure is supported by Applicant's own disclosure. It would have been obvious to one of ordinary skill in the art to have grafted the bonding material to the fiber material because grafting would lead to a stronger interaction between the fiber and bonding materials. Claim 25 is rejected as the applied references provide the claimed sulfur and as such the sulfur would react in the same manner as claimed.

Response to Arguments

4. Applicant's arguments with respect to claims 1-3, 5-15, 17-19, 21-23, 25 and 29-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MATTHEW D. MATZEK** whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571.272.1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/
Examiner, Art Unit 1794

/Arti Singh-Pandey/
Primary Examiner, Art Unit 1794